

**TITLE: Self-opening handle for a heavy duty artistic knife****BACKGROUND OF THE INVENTION**

The present invention relates to heavy duty artistic knives and more particularly to a self-opening handle for a heavy  
5 duty artistic knife which utilizes the expelling force of a pair of magnets to automatically open the handle.

A prior art heavy duty artistic knife 10 (as shown in Figs. 1 and 2) has a handle combined by a pair of corresponding first and second halves 11 and 12, a cleat 13 fastening their  
10 rear end, and a recess 111 in the front end of the first half 11 for engaging within a projection 121 at the front end of the second half 12. When changes the blade, one has to remove the cleat 13 at first and slides the second half 12 rearward to disengage with the first half 11, then removes the blade  
15 out of the blade rack. After the changing of a new blade, one should do the same job reversely. Therefore, it is inconvenient.

Some of the producers adds a pair of magnets inside the handle with positive pole facing the negative pole in order  
20 to enhance the stability of the handle. However, the second half 12 could not easily disengage with the first half 11 except disposing a spring therein to eject the second half 12 from the first half 11. This arrangement not only wastes the material but also causes the loosening of the blade rack.

25 **SUMMARY OF THE PRESENT INVENTION**

The present invention has a main object to provide a self-opening handle for a heavy duty artistic knife. When unfastens a swivel lock, the handle automatically opens a large angle to facilitate the blade changing without loosening the blade rack.

Accordingly, the self-opening handle for a heavy duty artistic knife of the present invention comprises generally a handle which is combined with a first and a second corresponding halves and pivoted together on their rear ends, a swivel lock locking a middle portion of the handle, a blade rack slidably disposing in the front portion and a spare blade chamber in the rear portion thereof. It is characterized in that a pair of magnets respectively disposing in an inner wall adjacent the rear end of the first and second halves with their positive poles facing each other. When unfastens the swivel lock, the two halves will automatically open a large angle due to the expelling force of the magnets. Therefore facilitating the changing of a new blade without loosening the blade rack or disengaging the second half with the first half.

The present invention will become more fully understood by reference to the following detailed description thereof when read in conjunction with the attached drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 and 2 are the plane views of a heavy duty artistic

knife according to a prior art,

Figure 3 is an exploded perspective view of a heavy duty artistic knife of the preferred embodiment according to the present invention,

5      Figure 4 is a perspective view to show the assembly of Fig. 3,

Figure 5 is a plane view of Fig. 4,

Figure 6 is a sectional view taken along line 5-5 of Fig. 5,

10      Figure 7 is a backside view to show that the swivel lock is locked up,

Figure 8 is a backside view to show that the swivel lock is about to unlocked up,

15      Figure 9 is a sectional view to show the assembly of the heavy duty artistic knife of the present invention, and

Figure 10 is a sectional view to show the opening of the second half from the first half.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

20      With reference to drawings and initiated from Figs. 3, 4, 5 and 6. The self-opening handle for a heavy duty artistic knife of the present invention comprises a handle which is combined with a first and second corresponding halves 20 and 30 and each has an elongate guide groove 21 and 31 in front top engaged with each other to define a gap therebetween,  
25      a plurality of transverse stop blacks 22 and 32 spacedly

disposed on the underside of the grooves 21 and 31, a plurality of longitudinal ribs 23 and 33 spacedly formed under the stop blocks 22 and 32 to define a sliding space thereinbetween, a horizontal slot 28 and 37 in a lower middle portion engaged  
5 with each other wherein the slot 28 is within a deep small circular depression 281 and the slot 37 is within a shallow large semi-circular depression 371, a circular recess 24 and 34 in a lower inner wall adjacent their rear ends engaged with each other for respectively disposing therein a pair of  
10 magnets 25 and 35 which have their similar poles positioned face to face in order to create an expelling or reaction force. Meanwhile, the first corresponding half 20 further has a lug 26 with an aligned through hole 261 on rear end and the second corresponding half 30 has a projection 36 with a pair of axial  
15 rods 361 on lateral side engaged with the aligned through hole 261 of the lug 26 such that the second corresponding half 30 is hinged on the first corresponding half 20 and a blade chamber 27 in a rear portion for disposing the spare blades 40.

20 A blade rack 40 slidably dispose in the front end of the handle. The blade rack 40 has a stop plate 41 at rear end engageable with any of the stop blocks 22 and 32, a striped sliding plate 42 on the top of the stop plate 41 and slidably disposed in the elongate grooves 21 and 31 and a pair notches  
25 43 spacedly formed on one side for engaging with a fin 441 of

a trapezoid shape blade 40.

A swivel lock 38 has a T-shaped shank 381 inserted through the horizontal slot 28 and 37 and a swivel button 382 on outer end engaged into the semi-circular depression 371 of the  
5 second corresponding half 30. When rotates the swivel button 382 for about 90 degrees, the handle is locked up (as shown in Fig. 7).

Figures 4, 6 and 9 show an assembled heavy duty artistic knife of the present invention. In use, the blade rack 40  
10 can be moved to and fro by pressing down the striped slider 42 to have the stop plate 41 disengaged with gaps between the stop blocks 22 and 32 and select a suitable gap to release the striped slider 42 then the stop plate 41 will be automatically engaged into that gap and the heavy duty artistic  
15 knife may begin to use.

When changes a blade 44 on the blade rack 40, rotates the swivel button 382 for about 90 degrees again to have the T-shaped shank 381 engaged with the slots 28 and 37, the second corresponding half 30 will automatically open a large angle  
20 due to the spelling force of the pair of the magnets 25 and 35. Then picks up a new blade 44 from the blade chamber 27 and replaces the old one without moving the blade rack 40 (as shown in Figs. 8, 9, 10). Once the two halves 20 and 30 are locked up by swivel lock 38, the heavy duty artistic knife  
25 may work again.

The feature of the present invention is of the pair of magnets 25 and 35 and the hinged the second corresponding half 30 upon the first corresponding half 20. The magnets 25 and 35 provide expelling force to force the second  
5 corresponding half 30 to automatically open. However, if the magnets 25 and 35 are positioned at front portion of the handle, the opening angle will be relatively small. That's why the magnets 25 and 35 are positioned at rear portion of the handle that the opening angle will be relatively larger.  
10 Nevertheless, this arrangement can be adopted to similar apparatus and the hinged connection of the two halves 20 and 30 can be also modified. But any modification should be in the scope of the present invention.

Note that the specification relating to the above  
15 embodiment should be construed as an exemplary rather than as a limitative of the present invention, with many variations and modifications being readily attainable by a person of average skill in the art without departing from the spirit or scope thereof as defined by the appended claims and their legal  
20 equivalents.